

REMARKS

Claims 1-17 are pending in the present application. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 102, Anticipation

The Office Action rejects claims 1, 3-4, 6-10, 12 and 17 under 35 U.S.C. § 102(e) as being anticipated by Dollin et al. (U.S. Patent No. 6,112,236 and *Dollin* hereinafter). This rejection is respectfully traversed.

The Office Action states:

Claims

1. A method of monitoring events within a data processing system comprising a speculative processor and a plurality of counters, wherein each counter among said plurality of counters occurrences of specified events within the data processing system, the method comprising:

specifying an event to be monitored;

monitoring for the specified event during the execution of instructions by the speculative processor;

generating a count of occurrences of the specified event for all instructions executed by the speculative processor; and

generating a count of occurrences of the specified event for instructions completely executed by the speculative processor.

Dollin

see title, abstract and figure 5, Item 59 (counts -- plurality of Counters). The processor is considered inherent to a system for monitoring events.

See col. 5 lines 63-67 and col. 7 lines 30-33 (predetermined implies Prior Specifying of an event). Also, See col. 8 lines 2-6.

see col. 15 lines 17-20.

see the inserted events in figure 6B.

see the corrupted events, col. 5 lines 37-40, which are utilized to help Determine the quality of service, see Col. 5 lines 46-60.

Office Action dated August 28, 2001 page 2. Applicant respectfully disagrees. *Dollin* teaches a method and apparatus for making quality of service measurements on a connection across a network. The apparatus of *Dollin* tracks events in existing traffic carried by a connection of interest. See col. 3, lines 16-19. In other words, the apparatus and method of *Dollin* monitors for events in data units transmitted across the connection of interest. *Dollin* teaches generating counts of lost, inserted, and corrupted events for the connection. See col. 4, line 48, to col. 5, line 39.

In contradistinction, the present invention monitors for events that occur during the execution of instructions by a speculative processor, generates a count of occurrences of the events for all instructions executed by the speculative processor, and generates a count of occurrences of the events for instructions completed by the speculative processor. A speculative processor is a modern processor that may speculatively execute instructions that may be canceled or flushed without completely executing because the condition for which they were speculatively executed did not occur. See specification, page 3, lines 1-6. By generating separate counts for events that occur for all instructions executed by the speculative processor and events that occur for instructions completed by the speculative processor, a count of events that may be related to speculatively executed instructions may be determined.

The Office Action states, "[t]he processor is considered inherent to a system for monitoring events." The Office Action misapplies the concept of "inherent" anticipation. Section 102 of Title 35 deals with novelty and loss of patent rights. An invention is said to be "anticipated" when it is squarely described or disclosed in a single reference as identified from one of the categories of 35 U.S.C. § 102, commonly referred to as "prior art". Express anticipation occurs when the invention is expressly disclosed in the prior art, patent or publication. In some cases, however, when the claimed invention is not described *in haec verba*, the "doctrine of inherency" is relied on to establish anticipation. Under the principles of inherency, a claim is anticipated if a structure in the prior art necessarily functions in accordance with the limitations of a process or method claim. *In re King*, 801 F.2d 1324, 231 U.S.P.Q. 136 (Fed. Cir. 1986). A prior art reference that discloses all of a patent's claim limitations anticipates that claim even though the reference does not expressly disclose the "inventive concept" or desirable property the

patentee discovered. *Verdgaal Brothers, Inc. v. Union Oil Company of California*, 814 F.2d 628, 2 U.S.P.Q.2d 1051, (Fed. Cir. 1987). It suffices that the prior art process inherently possessed at that property. *Id.* Mere possibilities or even probabilities, however, are not enough to establish inherency. The missing claimed characteristics must be a "natural result" flowing from what is disclosed. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 20 U.S.P.Q.2d 1746 (Fed. Cir. 1991). Unstated elements in a reference are inherent when they exist as a "matter of scientific fact". *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 7 U.S.P.Q.2d 1057 (Fed. Cir.), *cert. denied*, 488 U.S. 892 (1988) and *Hughes Aircraft Co. v. United States*, 8 U.S.P.Q.2d 1580 (Ct. Cl. 1988). Otherwise, the invention is not inherently anticipated.

In the present case, *Dollin* teaches local processing units 12, 14 at each end of the connection of interest. However, *Dollin* does not teach a "speculative processor" as recited in the claims. The Office Action provides no analysis as to why any processor of *Dollin* is, necessarily, a speculative processor. The examiner's assertion that these elements are present can be made only through the use of the applicants' disclosure as a template to fill in the missing elements.

Even assuming, *arguendo*, that *Dollin* teaches a speculative processor, *Dollin* does not teach "monitoring for the specified event **during the execution of instructions by the speculative processor**," "generating a count of occurrences of the specified event for **all instructions executed by the speculative processor**," or "generating a count of occurrences of the specified event for **instructions completely executed by the speculative processor**," as specifically recited in combination, in claim 1. The events *Dollin* are associated with data units transmitted over a network connection. *Dollin* does not teach or suggest associating events with instructions executed by a speculative processor or instructions completely executed by a speculative processor.

The Office Action proffers no analysis as to why the "inserted events" of *Dollin* are equivalent to occurrences of the specified event for instructions completely executed by the speculative processor. Furthermore, the Office Action proffers no analysis as to why the "corrupted events" of *Dollin* are equivalent to occurrences of the specified event for instructions completely executed by the speculative processor.

Since *Dollin* does not teach each and every claim limitation, the claims are not anticipated by the applied reference. Therefore the rejection of claim 1 is overcome.

Independent claims 4, 6, 7, 12, 15, 16, and 17 recite similar features to those addressed above with respect to claim 1 and are allowable for the same reasons. Additionally, claims 4, 6, 7, 12, 15, 16, and 17 recite other additional combinations of features not suggested by the reference.

Particularly, claim 4 recites “associating an interim counter with a particular instruction,” “associating a first global event counter with all instructions,” “associating a second global event counter with completed instructions,” and “in response to detecting a completion of the particular instruction, adding event counts from the interim counter to the second global event counter.” The Office Action does not address these features. Since *Dollin* does not teach or suggest these features, claim 4 cannot be anticipated by *Dollin*.

Also, claim 6 recites “computing a difference between the count of occurrences of the specified event for all instructions and the count of occurrences of the specified event for all completed instructions as a count of occurrences of the specified event for instructions speculatively executed by the speculative processor.” The Office Action does not address this feature. Since *Dollin* does not teach or suggest this feature, claim 6 cannot be anticipated by *Dollin*.

Further, claim 7 recites “in response to detecting an occurrence of a particular specified event, incrementing a first counter and a second counter” and “in response to detecting a completion of an instruction, adding the second counter to a third counter.” The Office Action does not address this limitation. Since *Dollin* does not teach or suggest, this feature, claim 7 cannot be anticipated by *Dollin*.

Since claims 3, 8-10, and 14 depend from claims 1, 7, and 12 the same distinctions between *Dollin* and the invention recited in claims 1, 7, and 12 apply for these claims. Additionally, claims 3, 8-10 and 14 claim other additional combinations of features not suggested by the reference. For example, claim 3 recites “monitoring a plurality of specified events for each instruction executed by the speculative processor.” The Office Action alleges that this limitation is taught by *Dollin* in col. 5, lines 3-40 and col. 7, lines 30-33. These lengthy portions of *Dollin* teach a summary of the invention

and “event types.” However, nowhere does *Dollin* teach monitoring a plurality of specified events **for each instruction executed by the speculative processor**. The Office Action proffers no analysis as to why “event types” are equivalent to monitoring events for each instruction executed by a speculative processor. Since *Dollin* does not teach or suggest this feature, claim 3 cannot be anticipated by *Dollin*. Consequently, it is respectfully urged that the rejection of claims 1, 3-4, 6-10, 12 and 14-17 have been overcome.

Furthermore, *Dollin* does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. *Dollin* actually teaches away from the presently claimed invention because it teaches monitoring events in data units transmitted across a network connection, as opposed to monitoring events that occur during execution of instructions by a speculative processor, as in the presently claimed invention. Absent the Office Action pointing out some teaching or incentive to implement *Dollin* for monitoring events within a data processing system comprising a speculative processor, one of ordinary skill in art would not be led to modify *Dollin* to reach the present invention when the reference is examined as a whole. Absent some teaching, suggestion, or incentive to modify *Dollin* in this manner, the presently claimed invention can be reached only through an improper use of hindsight using the applicant's disclosure as a template to make the necessary changes to reach the claimed invention.

II. 35 U.S.C. § 103, Obviousness

The Office Action rejects claims 2, 5, 11 and 13 under 35 U.S.C. § 103(a) as being unpatentable over *Dollin*. This rejection is respectfully traversed.

The Office Action states:

2. The method of 1 further comprising: computing a difference between the count of occurrences of the specified event for all completed instructions as a count of occurrences of the specified event for instructions speculatively executed by the speculative processor.

this feature is not specifically mentioned by Dollin et al.; however, it would have been obvious to a person of ordinary skill in the art at the time of the invention to compute the difference between inserted and Corrupted values enable the System to determine

the Quality of Service
being provided and to
generate statistics of
various measurements to
enable report. Generation,
see col. 5 lines 47-60.

Office Action dated August 28, 2001 page 4. Applicant respectfully disagrees. *Dollin* does not teach generating a count of occurrences of the specified event for all instructions or a count of occurrences of the specified event for all completed instructions. Therefore, it could not have been obvious to compute a difference between the count of occurrences of the specified event for all instructions and the count of occurrences of the specified event for all completed instructions.

The Office Action alleges that it would have been obvious to compute a difference between inserted and corrupted values. Whether or not it would have been obvious to compute a difference between inserted and corrupted values is irrelevant, because the claims do not recite computing a difference between inserted and corrupted values. Furthermore, *Dollin* may suggest a motivation of determining quality of service measurements on a connection across a network. However, *Dollin* is completely unrelated to speculative processors. Therefore, the statistics and reports generated in *Dollin* would not lead a person of ordinary skill in the art to determine a count of occurrences of a specified event for instructions speculatively executed by a speculative processor.

The present invention recognizes the problem of monitoring events for instructions speculatively executed by a speculative processor. *Dollin* does not teach the problem or its source. Instead, *Dollin* is directed towards monitoring events for making quality of service measurements on a connection across a network. Therefore, one of ordinary skill in the art would not be motivated to combine or modify the references in the manner required to form the solution disclosed in the claimed invention.

In addition, the Office Action may not make modifications to the prior art using the claimed invention as a model for the modifications. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780, 1783-1784 (Fed. Cir. 1992). "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification

obvious unless the prior art has suggested the desirability of the modification." *Id.* In other words, unless some teaching exists in the prior art for the suggested modification, merely asserting that such a modification would be obvious to one of ordinary skill in the art is improper and cannot be used to meet the burden of establishing a *prima facie* case of obviousness. Such reliance is an impermissible use of hindsight with the benefit of applicant's disclosure.

Therefore, absent some teaching, suggestion, or incentive in the prior art, *Dollin* cannot be properly modified to form the claimed invention. As a result, absent any teaching, suggestion, or incentive from the prior art to make the proposed modifications, the presently claimed invention can be reached only through the an impermissible use of hindsight with the benefit of applicant's invention as a model.

Claims 5, 11, and 13 recite similar features to those addressed above with respect to claim 2 and are allowable for the same reasons. Therefore, the rejection of claims 2, 5, 11 and 13 under 35 U.S.C. § 103 is overcome.

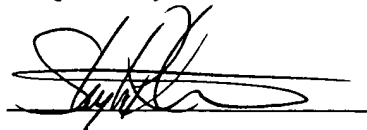
III. Conclusion

It is respectfully urged that the subject application is patentable over *Dollin* and is now in condition for allowance.

The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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